

EXAMPLES OF MANY COMMON FEATURES OR MOTOR MODIFICATIONS TO ILLUSTRATE HOW THE EPCA DEFINITIONS AND DOE GUIDELINES WOULD BE APPLIED TO MOTOR CATEGORIES: GENERAL PURPOSE; DEFINITE PURPOSE; AND SPECIAL PURPOSE—Continued

Motor modification		Category ¹					Explanation
		I	II	III	IV	V	
41	Standard Shafts/NEMA Mg-1	X	.....	.....	.....	.....	Includes single and double, cylindrical, tapered, and short shafts.
42	Non Standard Material	X	.....	.....	.....	.....
G. Fans							
43	Special Material	X	.....	.....	.....	.....
44	Quiet Design	X	.....	.....	.....	.....
H. Other Motors							
45	Washdown	X	.....	.....	.....	.....	Test with seals removed. JM and JP frame assignments.
46	Close-coupled pump .....	.....	.....	X	.....	.....
47	Integral Gear Motor .....	.....	.....	.....	.....	X	Typically special mechanical design, and not a T-frame; motor and gearbox inseparable and operate as one system. EPCA covers foot-mounting.
48	Vertical—Normal Thrust .....	.....	.....	.....	.....	X	
49	Saw Arbor .....	.....	.....	.....	X	.....	Special electrical/mechanical design. Totally-enclosed non-ventilated not equipped for cooling (IP54, IC410).
50	TENV .....	.....	.....	X	.....	.....
51	TEAO .....	.....	.....	X	.....	.....	Totally-enclosed air-over requires airflow from external source (IP54, IC417). When safety certification is not required. See also EPCA § 342(b)(1).
52	Fire Pump	X	.....	.....	.....	.....
53	Non-continuous .....	.....	.....	.....	.....	X	EPCA covers continuous ratings. Integral brake design factory built within the motor.
54	Integral Brake Motor .....	.....	.....	.....	X	.....

¹ Category I—General purpose electric motors as defined in EPCA.

Category II—Definite purpose electric motors that *can be used in most general purpose applications* as defined in EPCA.

Category III—Definite purpose motors as defined in EPCA.

Category IV—Special purpose motors as defined in EPCA.

Category V—Outside the scope of “electric motor” as defined in EPCA.

APPENDIX B TO SUBPART B OF PART 431—UNIFORM TEST METHOD FOR MEASURING NOMINAL FULL LOAD EFFICIENCY OF ELECTRIC MOTORS

1. *Definitions.*

Definitions contained in §§ 431.2 and 431.12 are applicable to this appendix.

2. *Test Procedures.*

Efficiency and losses shall be determined in accordance with NEMA MG1-1993 with Revisions 1 through 4, paragraph 12.58.1, “Determination of Motor Efficiency and Losses,” (Incorporated by reference, see § 431.15) and either:

(1) CSA International (or Canadian Standards Association) Standard C390-93 Test Method (1), (Incorporated by reference, see § 431.15), *Input-Output Method With Indirect Measurement of the Stray-Load Loss and Direct Measurement of the Stator Winding (I^2R), Rotor Winding (I^2R), Core and Windage-Friction Losses*, or

(2) IEEE Standard 112-1996 Test Method B, *Input-Output With Loss Segregation*, (Incorporated by reference, see § 431.15) with IEEE correction notice of January 20, 1998, except as follows:

(i) Page 8, subclause 5.1.1., *Specified temperature*, the introductory clause does not apply. Instead the following applies:

The specified temperature used in making resistance corrections should be determined by one of the following (Test Method B only allows the use of preference (a) or (b).), which are listed in order of preference.

(ii) Page 17, subclause 6.4.1.3., *No-load test*, the text does not apply. Instead, the following applies:

See 5.3 including 5.3.3, the separation of core loss from friction and windage loss. Prior to making this test, the machine shall be operated at no-load until the input has stabilized.

(iii) Page 40, subclause 8.6.3, *Termination of test*, the third sentence does not apply. Instead, the following applies:

For continuous rated machines, the temperature test shall continue until there is 1 °C or less change in temperature rise over a 30-minute time period.

(iv) Page 47, at the top of 10.2 form B, immediately after the line that reads “Rated Load Heat Run Stator Winding Resistance Between Terminals,” the following additional line applies:

Department of Energy

Pt. 431, Subpt. B, App. C

Temperature for Resistance Correction (t_s) = $-^{\circ}\text{C}$ (See 6.4.3.2).

(v) Page 47, at the bottom of 10.2 Form B, after the first sentence to footnote t_i , the following additional sentence applies:

The values for t_s and t_i shall be based on the same method of temperature measurement, selected from the four methods in subclause 8.3.

(vi) Page 47, at the bottom of 10.2 Form B, below the footnotes and above "Summary of Characteristics," the following additional note applies:

NOTE: The temperature for resistance correction (t_s) is equal to $[(4) - (5) + 25^{\circ}\text{C}]$.

(vii) Page 48, item (22), the torque constants " $k = 9.549$ for torque, in N·m" and " $k = 7.043$ for torque, in lbf·ft" do not apply. Instead, the following applies:

" $k_2 = 9.549$ for torque, in N·m" and " $k_2 = 7.043$ for torque, in lbf·ft."

(viii) Page 48, at the end of item (27), the following additional reference applies:

"See 6.4.3.2."

(ix) Page 48, item (29). "See 4.3.2.2, Eq. 4," does not apply. Instead the following applies:

Is equal to $(10) \cdot [k_1 + (4) - (5) + 25^{\circ}\text{C}] / [k_1 + (7)]$, see 6.4.3.3."

3. *Amendments to test procedures.*

Any revision to IEEE Standard 112-1996 Test Method B with correction notice of January 20, 1998, to NEMA Standards Publication MG1-1993 with Revisions 1 through 4, or to CSA Standard C390-93 Test Method (I), subsequent to promulgation of this appendix B, shall not be effective for purposes of test procedures required under part 431 and this appendix B, unless and until part 431 and this appendix B are amended.

APPENDIX C TO SUBPART B OF PART 431—COMPLIANCE CERTIFICATION

CERTIFICATION OF COMPLIANCE WITH ENERGY EFFICIENCY STANDARDS FOR ELECTRIC MOTORS (OFFICE OF MANAGEMENT AND BUDGET CONTROL NUMBER: 1910-1400. EXPIRES FEBRUARY 13, 2014)

An electronic form is available at <https://www.regulations.doe.gov/ccms/>.

1. Name and Address of Company (the "company"):

2. Name(s) to be Marked on Electric Motors to Which this Compliance Certification Applies:

3. If manufacturer or private labeler wishes to receive a unique Compliance Certification number for use with any particular brand name, trademark, or other label name, fill out the following two items:

A. List each brand name, trademark, or other label name for which the company requests a Compliance Certification number:

B. List other name(s), if any, under which the company sells electric motors (if not listed in item 2 above):

Submit electronically at <https://www.regulations.doe.gov/ccms/>.

Submit paper form by Certified Mail to: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies (EE-2J), Forrestal Building, 1000 Independence Avenue, SW., Washington, DC 20585-0121.

This Compliance Certification reports on and certifies compliance with requirements contained in 10 CFR Part 431 (Energy Conservation Program for Certain Commercial and Industrial Equipment) and Part C of the Energy Policy and Conservation Act (Pub. L. 94-163), and amendments thereto. It is signed by a responsible official of the above named company. Attached and incorporated as part of this Compliance Certification is a Listing of Electric Motor Efficiencies. For each rating of electric motor* for which the Listing specifies the nominal full load efficiency of a basic model, the company distributes no less efficient basic model with that rating and all basic models with that rating comply with the applicable energy efficiency standard.

*For this purpose, the term "rating" means one of the combinations of an electric motor's horsepower (or standard kilowatt equivalent), number of poles, motor type, and open or enclosed construction, with respect to which § 431.25 of 10 CFR Part 431 prescribes nominal full load efficiency standards.

Person to Contact for Further Information:

Name: _____

Address: _____

Telephone Number: _____

Facsimile Number: _____

If any part of this Compliance Certification, including the Attachment, was prepared by a third party organization under the provisions of 10 CFR 431.36, the company